REPUBLIC OF MAURITIUS

NATIONAL AUDIT OFFICE

PERFORMANCE AUDIT REPORT

IMPROVING THE PROVISION OF PATIENT MEALS IN HOSPITALS

IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT GOALS 2, 3 AND 12

MINISTRY OF HEALTH AND WELLNESS

JUNE 2025

FOREWORD

Section 16 (1A) of the Finance and Audit Act makes provision for the Director of Audit to carry out performance audit and report on the extent to which a Ministry, Department or Division is applying its resources and carrying out its operations economically, efficiently and effectively.

I am pleased to send to the Honourable Prime Minister, Minister of Finance, Defence, Home Affairs and External Communications and Rodrigues and Outer Islands, this Performance Audit Report entitled "Improving the Provision of Patient Meals in Hospitals", to be tabled in the National Assembly.

The audit was conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAI) 3000 Performance Auditing Standard of the International Organisation of Supreme Audit Institutions (INTOSAI).

Catering services are vital in patients' rehabilitation and recovery. Therefore, hospitals need a well-managed catering service to provide daily meals to inpatients.

The Ministry of Health and Wellness (MoHW), through its Hospital Administrations, is responsible for the provision of catering services to inpatients. This performance audit assessed the measures taken by the Ministry and its Hospital Administrations in providing efficient catering services in hospitals to ensure that patients' nutritional needs are met while maintaining high standards of hygiene and food safety, quality and patient satisfaction.

The National Audit Office (NAO) identified performance gaps in the MoHW interventions for the provision of patient meals. These gaps included (i) the absence of established guidelines and Standard Operating Procedures, (ii) inadequate monitoring and oversight of the catering services, (iii) poor adherence to food hygiene standards, (iv) weak nutritional assessment practices, and (v) inefficient utilisation of allocated funds. The gaps need to be addressed to enhance the performance of hospital catering operations.

A follow-up audit will be carried out to evaluate the effectiveness and timeliness of actions taken in relation to the reported findings and recommendations.

I take this opportunity to thank the Accounting Officer and the staff of the Ministry of Health and Wellness for their cooperation and collaboration and I also wish to express my sincere thanks to NAO staff for their hard work and dedication.

DR D. PALIGADU

Director of Audit
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11 June 2025

CONTENTS

CONTENTS

ABBREVIATIONS & ACRONYMS

ADG	Australian Dietary Guidelines
AGHE	Australian Guide to Healthy Eating
BCH	Bruno Cheong Hospital
BSH	Brown Sequard Hospital
FAO	Food and Agricultural Organisation
GSEA	Government Services Employees Association
IPC	Infection Prevention Control
JH	Dr. Abdool Gaffoor Jeetoo Hospital
JNH	Jawaharlal Nehru Hospital
MOHW	Ministry of Health and Wellness
NAO	National Audit Office
NCC	National Codex Committee
NHS	National Health Service
PHFSIU	Public Health and Food Safety Inspectorate Unit
PSC	Public Service Commission
RHSA	Regional Health Services Administrator
SAJH	Sir Aneerood Jugnauth Hospital
SBEH	Subramania Bharati Eye Hospital
SOP	Standard Operating Procedures
SSRNH	Sir Seewoosagur Ramgoolam National Hospital
USDA	United States Department of Agriculture
VH	Victoria Hospital
WHO	World Health Organisation

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EXECUTIVE SUMMARY

On average, some 10,000 meals[1] are prepared daily in hospitals, necessitating a well-managed catering service to ensure the timely provision of healthy meals to inpatients. Catering services play a crucial role in supporting patients' rehabilitation and recovery. The efficiency and effectiveness of these services depend on the sound planning and coordination of key processes: procurement, menu planning, food preparation, and the efficient distribution of meals to wards and patients.

The Ministry of Health and Wellness, through its Hospitals, is responsible for the provision of meals to inpatients. The Ministry spent some Rs 180 million on the purchase of foodstuffs and staff costs[2] for the financial year 2023-24. Some 160 staff are currently working in 12 catering units.

This report focuses on the measures taken by the Ministry and its Hospital Administrations in providing catering services to ensure that patient nutritional needs are met while maintaining high standards of hygiene and food safety, quality and patient satisfaction.

The audit covered the period January 2023 to January 2025 and was supplemented with information relating to the period prior to January 2023. Surveys were carried out between August 2024 and January 2025 within 5 regional and 2 specialised hospitals.

Key Findings and Recommendations

1. Absence of Guidelines and Standard Operating Procedures to ensure compliance

1.1 Lack of hospital-specific guidelines derived from the law for public hospitals

The Food Act applies across the entire food industry, encompassing hotels, restaurants, and hospitals. The Ministry did not develop specific guidelines tailored exclusively for public hospitals. Key elements of food safety and hygiene required by law were not translated into practical guidelines for use by hospital food service staff. Consequently, this led to inadequate food handling and management of leftovers.

1.2 No Standard Operating Procedures for managing patient meal services in hospitals

There were no comprehensive Standard Operating Procedures to guide hospital catering operations, including food preparation, safety, and quality control in the kitchen. Also, there was no clear framework outlining the decision-making process for catering services or defining the roles and responsibilities of those involved. Consequently, daily catering services were provided without effective management oversight.

[1] Excluding some 10,500 snack meals for night staff, day staff and staff working double shift which consist of bread, butter, cheese, jam, omelette/hard-boiled egg.
[2] This amount excludes overtime, public holiday allowances, water, energy and capital costs.

1.3 No guidelines and regulations for the management of food waste in hospitals

During visits carried out by the National Audit Office (NAO), it was noted that plate wastes were not monitored and unserved meals were either preserved for new admissions or consumed by staff. Interviews with ward managers revealed the absence of a written protocol to guide staff on managing leftovers.

Additionally, there were no provision in the current Food Regulations addressing the management of food waste in hospitals. This absence of regulations can hinder efforts to monitor, reduce, and recycle food waste, resulting in increased costs and missed opportunities for sustainable practices.

Root Cause

Hospital catering service is classified as an allied service rather than an essential or a priority service. As a result, there is a lack of strategic focus, incentive, and commitment from the Ministry and Hospital Administrations to establish comprehensive guidelines and Standard Operating Procedures.

Recommendations

1) The Ministry needs to formulate comprehensive guidelines and develop Standard Operating Procedures covering all key aspects of meal planning, food preparation, hygiene, safety, and quality. These need to be aligned with the Mauritius Food Act and Regulations and international best practices.

2) Hospital Administrations need to identify the sources and causes of food waste to develop and implement effective strategies to minimise same. Reducing food waste can redirect funds to enhance food services, thus improving patient care. Additionally, they are required to monitor and report on food waste by type, ensuring transparency through the publication of this data.

Ministry's Response

The Ministry will consider developing Standard Operating Procedures and guidelines regarding hygiene and safety requirements as stated in the law.

2. Inadequate Monitoring and Oversight to ensure efficient and effective catering services

2.1 No Performance Indicators on Hospital Catering Services

The Ministry and Hospital Administrations did not establish key performance indicators to assess the efficiency and effectiveness of catering services. Key performance indicators, for example, patient satisfaction, timely patient food delivery, food waste, and food-related incidents were not developed. Consequently, statistics related to food services, such as food and staff costs, were not readily available. The absence of these critical performance measures

limits the Ministry's ability to evaluate and make data-driven decisions to improve the efficiency, safety, and quality of hospital catering services.

2.2 No Regular Performance Reporting

The Hospital Administrations did not regularly report on the performance of the provision of catering services to patients. Instead, only updates were provided to the Ministry on an ad-hoc basis, mostly when there were complaints. This approach impacted on the Ministry's ability to monitor ongoing service quality, track progress, and ensure that appropriate corrective actions were promptly taken to improve catering services.

Root Cause

The Ministry and Hospital Administrations did not establish a comprehensive mechanism to oversee and monitor catering activities in all hospitals.

Recommendations

1) The Ministry and Hospital Administrations need to identify and establish key performance indicators of hospital catering services to monitor and track progress regularly. This will be aligned with the Government's objective to introduce performance-based budgeting.

2) The Ministry should set up an effective reporting mechanism for monitoring purposes to ensure that hospitals are providing quality catering services as expected.

Ministry's Response

The Ministry will consider working on the Key Performance Indicators.

3. Non-compliance with Food Hygiene and Safety Regulations

3.1 Food hygiene and safety practices not implemented

Food Hygiene and Safety is regulated by the Food Regulations 2024. Surveys were carried out in the catering units of the 5 regional hospitals by the NAO team. During the site visits, it was noted that proper food hygiene practices were not implemented.

3.2 Use of non-fresh vegetables

During surveys carried out by the NAO team in the catering units of the 5 Regional Hospitals, it was noted that, in some cases, non-fresh vegetables were stored in the chilled room.

3.3 Lack of regular monitoring of food hygiene in catering units

Public Health Officers did not sufficiently enforce food hygiene and safety to ensure compliance with the Food Regulations. During the period January 2023 to December 2024, less than 10 inspections were conducted at Jeetoo Hospital, Victoria Hospital, and Brown Sequard Hospital.

It was noted that Public Health Officers monitored mainly the maintenance and cleanliness of the catering units.

Root Cause

The Public Health and Food Safety Inspectorate Unit faces a shortage of staff as it oversees the whole food industry. Moreover, Hospital Administrations did not put in place a proper monitoring mechanism to ensure compliance with regulations.

Recommendations

Hospital Administrations, being responsible for ensuring the effective delivery of catering services, need to set up a proper monitoring mechanism covering all stages of the catering service process. The Ministry and Hospital Administrations need to prepare a comprehensive monitoring checklist to ensure consistency in delivery of a higher-quality catering services.

Ministry's Response

The Public Health and Food Safety Inspectorate Unit agrees that, in general, practices do not change despite numerous inspections and negative remarks and there is an accountability issue. Food Safety Management practices will be converted into a checklist which will be used by the catering staff daily to ensure that basic food safety principles are being applied at each step, that is, from delivery, cooking to serving of meals in wards.

4. Inadequate Nutritional Assessment and Meal Planning

Nutritional assessment and planning at the hospitals level were not adequate as follows:

- There was an absence of a mechanism to carry out nutritional assessment of a patient on admission and during his/her stay,
- There were no documented nutritional plans,
- The Ministry did not have hospital nutritional or dietary guidelines which could have provided evidence-based recommendations for healthy eating, particularly focusing on foods and nutrients associated with chronic diseases,
- Nutritionists were not qualified to provide therapeutic diagnosis,
- Responsibilities for meal planning were not clearly defined,
- There was no meal plan for children in some hospitals,
- There was limited patient involvement - Failure to involve patients in menu planning resulted in meals that were unappetising or ignored, and
- There was no patient feedback/ complaint system.

Root Cause

There was no structured approach and system in place for nutritional assessment, meal planning and patient feedback.

Recommendations

1) Hospital Administrations need to include nutritional assessment and nutritional plans (also known as diet plans or meal plans) as part of their healthcare standards.

2) The Ministry, through its Nutrition Unit, needs to develop hospital dietary guidelines that incorporate locally available food and vegetables to ensure nutritional adequacy and sustainability.

3) The Ministry needs to ensure the availability of clinical dietitians in hospitals to provide specialised nutritional care as part of therapeutic treatment. Additionally, existing nutritionists should be upskilled through structured training programs to enhance their competencies in clinical dietetics, ensuring improved patient care and dietary management.

4) The Ministry and Hospital Administrations need to ensure that dietitians are actively involved in menu planning.

5) All hospitals should maintain consistency in meal planning to ensure standardised, high-quality nutritional care that meets the dietary needs of all patients. Additionally, a dedicated children's menu should be integrated across all hospitals to accommodate pediatric patients with age-appropriate, nutritionally balanced meals that support their growth and recovery.

6) Hospital Administrations need to conduct patient satisfaction surveys to evaluate the quantity and quality of food provided and incorporate feedback into meal planning.

7) Hospital Administrations need to ensure that food taste is improved through better cooking techniques and seasoning with, for example, more herbs and spices known for their therapeutic properties. These additions not only enhance flavour but also contribute to the overall health benefits of the diet. Hospitals can innovate by integrating Ayurvedic nutrition (Appendix VI refers). Menu tasting needs to be conducted to assess the taste, texture, aroma, and appearance of the food (an example of an evaluation form is at Appendix VII).

8) The Ministry can explore the possibility of hiring the services of a Food Scientist (Appendix VIII refers) to advise on improving the quality of food.

9) To promote healthier cooking and preserving the nutritional value of food, the Ministry can consider investing in equipment such as ovens and steamers (e.g., baking instead of frying fish in oil). The way food is prepared significantly impacts the retention of nutrients. Also, vegetable cutters can be used to enhance efficiency and to reduce food preparation time.

Ministry's Response

- The World Health Organisation dietary guidelines have been translated into Diet scales. The revised Hospital Diet Scale 2018 included a list of new food items that were introduced to bring more variety to food. The allowances for potherbs[3] and spices were increased to improve and enhance food taste and flavour. Daily Meal planning lies under the responsibility of the catering officer. The nutritionists are responsible to vet the meal plan as and when needed.

- All Nutritionists in post have been recruited by the Public Service Commission and have been working in hospital/clinical settings advising patients on therapeutic diets since the establishment of the Nutrition unit. The scheme of service of Dietitians and Nutritionists are still being worked upon at the level of Ministry of Health and Wellness, Government Services Employees Association, and the Ministry of Civil Service and Administrative Reforms. Currently, all officers of the Nutrition unit are registered as Nutritionists at the level of the Allied Health Professionals Council.

5. Inefficient Use of Funds

Funds allocated for the provision of catering services were not used efficiently as follows:

- Financial information on catering services was not readily available for decision-making purposes. There was no separate expenditure item for catering services.
- The Food Trolley and Container project did not meet its set objective. The food trolleys were too heavy to be transported from the kitchen to the wards. Additionally, the packing of meals required extra staff, which was not catered for; and
- The number of meals in the Diet sheets for patients was overstated. There was a lack of monitoring in the distribution of food from the kitchen to the patients' plates.

Root Cause

There was no internal monitoring system over catering expenditure, planning and designing of projects, and distribution of food which impacted on fund utilisation.

Recommendations

1) The Ministry needs to create a separate expenditure item exclusively for catering services that will help in appropriate decision-making.
2) Projects need to be properly planned and designed, taking into account all the resources needed.
3) Hospital Administrations need to conduct regular ward surveys to ascertain the accuracy of daily diet sheets and prevent overstatement, which may lead to excess food preparation.

[3] Potherbs are any plant having leaves, flowers, stems etc that are used in cooking for seasoning and flavouring or are eaten as a vegetable.

Ministry's Response

- Consideration is being given to classify expenditure on catering services under the item Catering rather than the Provision of Stores. A request will be made to the Ministry of Finance accordingly.

- Emphasis was laid more on the objectives of the project. In case the project is extended, the recommendations will be taken into consideration.

Conclusion

The primary objective of the Ministry is to provide quality healthcare to patients with the provision of meals to inpatients which is classified as an allied service. Although, hospitals provided some 4 million[4] meals during the financial year 2023-24, they faced the following challenges:

- Absence of established guidelines and Standard Operating Procedures,
- Inadequate monitoring and oversight,
- Poor adherence to food hygiene standards,
- Weak nutritional assessment and planning and
- Inefficient utilisation of allocated funds.

To improve the provision of patient meals in hospitals, the Ministry must strengthen its governance mechanisms by implementing clear operational guidelines, establishing performance monitoring systems, optimising resource allocation and ensuring that patient nutritional needs are met while upholding the highest standards of hygiene, food safety, and quality. The Ministry should ensure the effective implementation of the recommendations and carry out regular reviews for continuous improvement of the catering services at the different hospitals.

[4] Excludes some 3 million snack meals provided to staff who carry out double shift and night shift

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CHAPTER ONE

INTRODUCTION

This Chapter provides a background of the subject matter examined and describes the audit approach used in carrying out the audit.

1.1 Background

The provision of nutritious and hygienic meals is an essential component of patient care, directly contributing to recovery and overall well-being.

176,119 patients were admitted during the financial year 2023-24 in the various hospitals across the country. Some 4 million[5] meals were prepared, highlighting the significant scale of the hospital catering system.

The Ministry of Health and Wellness, through its Hospitals, is responsible for the provision of meals to inpatients. The Ministry spent some Rs 180 million on the purchase of foodstuffs and staff costs[6] in the financial year 2023-24. There are 12 catering departments supported by approximately 160 staff. Catering services were provided to inpatients across:

- five regional hospitals,
- two district hospitals,
- six specialised hospitals, and
- six detoxification centers.

Additionally, meals were provided to staff working extra hours and to Public Health Officers engaged in fogging exercises.

1.2 Audit Motivation

An average of 10,000[7] meals are prepared per day. Hence, hospitals need a well-managed catering service to provide daily meals to inpatients. Catering services are vital in patients' rehabilitation and recovery. An effective catering service depends on sound planning and coordination of several processes such as procurement, menu planning, food preparation and distribution of meals to wards and patients.

The provision of patient meals in hospitals is a topic of parliamentary and public interest. Several complaints were frequently reported in the media.

[5] As per Annual Report 2023-2024 : 3,094,000 meals for patients and 852,204 meals for staff excluding 3,522,866 snack meals for night staff, day staff and staff working double shift which consist of bread, butter, cheese/jam, tea, milk, omelette/ hard-boiled egg.
[6] This amount excludes overtime, public holiday allowances, water, energy and capital costs.
[7] Excluding some 10,500 snack meals.

1.3 Audit Objective

The audit assessed the adequacy of the measures taken by MoHW in providing efficient catering services in hospitals to ensure that patient nutritional needs are met while maintaining high standards of hygiene and food safety, quality and patient satisfaction.

The audit objective has been formulated as audit questions and broken down as follows:

1. Was there a policy, guidelines and standard operating procedures for the proper management of catering services?
2. Was there proper monitoring and oversight to ensure efficient and effective catering services?
3. Was there adequate monitoring of food hygiene and safety practices?
4. Were nutritional assessment and planning adequate?
5. Were funds allocated for catering services used efficiently?

1.4 Audit Scope

The audit focused on the interventions of the Ministry to provide nutritional meals to inpatients for their recovery. The processes involving procurement, menu planning, food prepration and distribution of meals to wards and patients were assessed. The geographical coverage was limited to the Island of Mauritius only.

The audit covered the period January 2023 to January 2025 and was supplemented with information relating to the period prior to January 2023. Surveys were carried out from August 2024 to January 2025 in 5 regional hospitals and 2 specialised hospitals.

1.5 Audit Approach

The audit was conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAI) 3000 Performance Auditing Standard of the International Organisation of Supreme Audit Institutions (INTOSAI).

A combination of 2 approaches was used to determine the nature of the examination to be carried out, and is described as follows:

- Results-oriented approach to assess whether the outcome or output objectives set by the Ministry have been achieved; and
- Systems-oriented approach to examine the proper functioning and management of the catering services.

1.6 Audit Methodology

Data was collected through document reviews, interviews and site visits.

Information relating to policies and strategies on management of catering services, food legislation, mechanisms, processes, procedures, practices and expenditure incurred for the provision of catering services was collected through review of files and documents.

Interviews were carried out with key personnel responsible for the effective delivery of catering services including Cooks, Ward Managers and Hospital Attendants. Surveys, visits and walk-throughs were carried out in the catering units and wards of 5 Regional Hospitals and 2 Specialised Hospitals. Patient feedback was collected in 3 Regional Hospitals.

1.7 Assessment Criteria

The main criteria used as a basis for evaluating the evidence collected was extracted from:

- *Legislations* – Food Regulations 2024, Food Act 2022, Mauritius Food Standards Agency Act 2022, Food Regulations 1999.
- *Policies and Strategies* - National Plan of Action for Nutrition 2016-2020, Health Sector Strategic Plan 2020-2024.
- *Budget cost and estimates.*
- *Good Practices and Guidelines* like World Health Organisation, United Nations documents.
- *The British Dietic Association (BDA)* – The BDA's Nutrition and Hydration Digest.
- *Food Standards Agency, UK*[8] – Avoiding cross-contamination in food business.

1.8 Data Validation Process

Management of MoHW as well as Administrators of Hospitals were provided with the audit criteria, findings and recommendations to confirm their relevance, accuracy and suitability.

[8] The Food Standards Agency (FSA) works to protect public health and consumers' wider interests in relation to food in England, Wales and Northern Ireland.

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CHAPTER TWO

MANAGING CATERING SERVICES

This chapter sets out information about catering services provided by hospitals and how the Ministry manages the operation of the catering services.

2.1 Background

The right to adequate food is a legally binding human right. The right to food is a constitutionally protected right in several countries such as India, Iran, Mexico, Pakistan and South Africa. While other countries either adopted a framework law or directly applied ICESCR[9].

The Mauritian Context

The Constitution of the Republic of Mauritius does not contain provisions related to the right to adequate food. Mauritius became a State party to the ICESCR in 1973 by way of accession. Thus, Mauritius has a legal binding to human right international law.

The Right to Adequate Food linkage to Catering Services in Hospitals

The right to adequate food as a human right is intrinsically linked to catering services in public hospitals in several critical ways. This connection revolves around ensuring that all inpatients, regardless of their circumstances, receive nutritious, safe and culturally appropriate meals that contribute to their health and well-being.

The Ministry of Health and Wellness (MoHW), also referred to as the "Ministry", is responsible for the provision of meals to inpatients in hospitals, the inspection of basic sanitation and food safety, and the formulation and implementation of health policies (including dietary guidelines).

Sustainable Development Goals by 2030

Mauritius is committed to attaining the Sustainable Development Goals (SDGs) by 2030. The Health Sector Strategic Plan 2020- 2024 provides a clear direction for a healthier future for its population and describes the strategic directions and initiatives that the country will pursue to attain its vision and sustain progress to further improve the 17 targets related to SDG 3. The mission of MoHW is 'to provide the highest attainable standard of health to its citizens'. Hospital catering services are directly linked to several SDGs, particularly those related to food systems, health, and environmental sustainability. Specifically, hospital catering can contribute to achieving SDG 2 (Zero Hunger), and SDG 3 (Good Health and Well-being), SDG 12 (Responsible Consumption and Production).

[9] International Covenant on Economic, Social and Cultural rights

A list of SDGs associated with catering services in hospitals is shown in Appendix I.

2.2 International Standards

Hazard Analysis and Critical Control Points

The Hazard Analysis and Critical Control Points (HACCP) is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product. HACCP Principles & Application Guidelines.

ISO 22000 standard

The ISO 22000 is a Food Safety Management System that can be applied to any organisation in the food chain from farm to fork. Becoming certified to ISO 22000 allows a company to show its customers that they have a food safety management system in place.

CODEX Alimentarius Standards

The Codex Alimentarius is about safe, good food for everyone-everywhere.

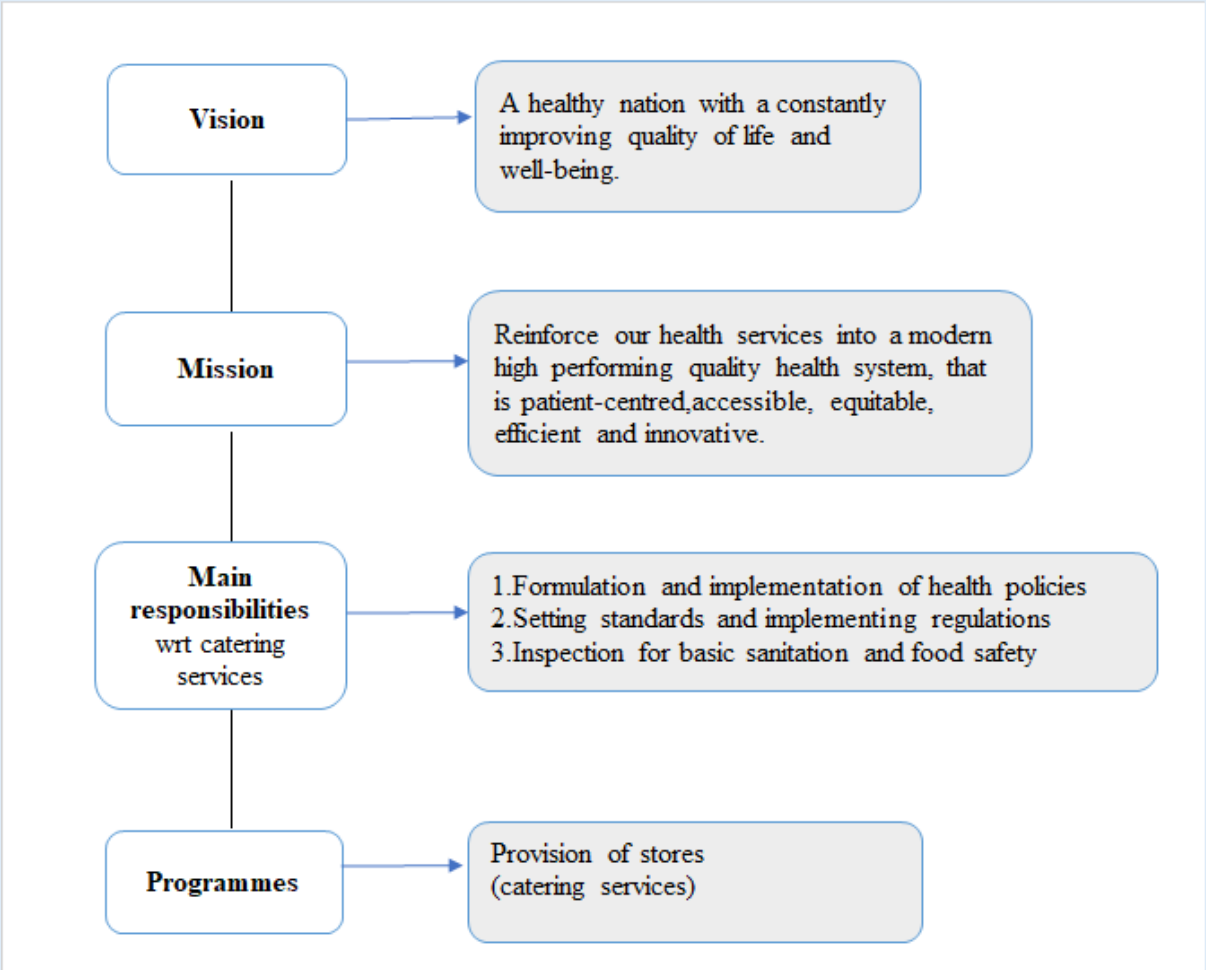
The Codex Alimentarius, or 'Food Code' is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission. The Commission is the central part of the joint FAO/WHO Food Standards Programme and was established by FAO and WHO to protect consumer health and promote fair practices in food trade. It held its first meeting in 1963.

Codex Alimentarius in Mauritius

Mauritius has been a member of the Codex since 1971. In 2010, the Ministry of Agro-Industry established the Codex contact point and the National Codex Committee (NCC) at the Food Technology Laboratory. The National Codex Contact point serves as the primary liaison between Mauritius and the Codex Alimentarius Commission coordinating activities related to the implementation of codex standards within the country. The Food Technology is accredited to the ISO 17025 standard.

One of the key stakeholders in the NCC is the Ministry of Health and Wellness which is the Regulatory body responsible for ensuring food safety. The Public and Health Food inspectorate within the MoHW responsible for enforcing the food law based on codex standards. For instance, the Ministry has implemented specific requirements for the quality, safety and nutritional value of certain products all of which are derived from codex standards. Additionally, the MoHW has recently established the Mauritius Food Standards Agency. The primary role of the agency is to facilitate coordination among various organisations involved in food safety and nutrition. The implementation of codex standards will serve as the foundation for the work carried out by the agency.

2.3 Objectives of the Ministry



2.4 Legal Framework

A Legal framework is essential for ensuring efficient food services management in hospitals. The framework provides guidelines, standards and regulations to safeguard patient health and ensure high-quality food service operations. In this perspective, appropriate food legislations have been enacted namely:

- Public Health Act 1925
- The Food Act 2022
- The Mauritius Food Standards Agency Act 2022
- Allied Health Professionals Council Nutritionist Regulations 2022
- Allied Health Professionals Council Dietitian Regulations 2022
- Allied Health Professionals Council (Amendment of Schedule) Regulations 2024
- Food Regulations 2024

2.5 Policies and Strategies

The Ministry of Health and Wellness has classified hospital catering services as an allied service of the overall public healthcare system. Under its strategic objective 3.4 of the Health Sector Strategic Plan 2020-2024, the Ministry intends to develop further allied services to meet the increasing workload of hospitals. The strategic action is to review the existing monitoring system to ensure the cost-effective management of catering services.

National Plan of Action for Nutrition 2016-2020 (Sept 2016)

Para 4.4 Establishment of Food Services

Objective: To promote the establishment of food services at all levels in order to provide balanced meals for the whole population.

Para 4.4.1 Description

There is an increasing demand for ready to eat food outside the home; this food is being provided on an adhoc basis with minimal nutritional planning and hygienic control. To meet the demand for food of good quality and safety, new food service facilities will be encouraged at 4 levels:

- Schools
- Workplaces
- Hospitals
- Street front

To set the pace, food services facilities will be established in Governmental workplaces, wherever possible. Food Services will be improved in hospitals and schools. Established food services for the elderly will also be revisited.

Para 4.4.2 Implementation

The Ministry of Health and Quality of Life will continuously review and improve the food service in hospitals.

Para 1.4.1 National Nutrition Task Force and the Nutrition Committee

1.4.2 Objective: To set up a National Nutrition Task force and a Nutrition Committee in view of advising on the implementing, monitoring and evaluating the National Plan of Action for Nutrition.

Health Sector Strategic Plan 2020-2024

Para 7.3 Hospital and Allied Services

Catering services has been classified under Strategic Goal 3 'Strengthen and benchmark the provision of high quality, patient-centred and safe curative services, in line with international best practices' as follows:

Strategic Objective	Strategic Action
Strategic Objective 3.4 Further develop allied services[10] to meet increasing workload of hospitals.	Review the existing monitoring system in place to ensure the cost-effective management of hotel services, which include catering, laundry and security services.

Indicator	Baseline 2019	Target 2024	Data Source
Service availability and readiness for hospital services as per standard package of services	Not Applicable	>90%	Survey
Referral protocols developed and implemented	0	1	Published Protocols

Source: Extract from Health Sector Strategic Plan 2020-2024 Table XIII Monitoring indicators (Hospital and Allied Services)

2.6 Government Expenditure on Catering Services

Items for the Catering Department, that is, vegetables, dry provisions, fish, eggs, chicken are spent under Items "Provision and Stores" of the budget estimates. Table 1 below shows the expenditure under this item for the last 5 years.

Table 1: Expenditure on Catering Services for the last 5 years

		2019/2020 Rs	2020/21 Rs	2021/22 Rs	2022/23 Rs	2023/24 Rs
18-102 Hospital and specialised services						
229000005	Provision of stores	218,104,653	221,989,379	242,792,753	297,362,376	282,563,915

Source: Treasury Accounting System

Staff Costs for Catering officers and cooks are disbursed from the Personal Emoluments Item. Whereas expenditure for maintenance of equipment is incurred under the item Maintenance.

[10] Allied services include, laboratory and imaging services, the National Blood Transfusion Service (NBTS). Other allied services include, the Service d'Aide Medicale Urgence (SAMU) and the "hotel services" which group catering and laundry services.

The number of staff involved in the operation of the catering services (excluding nursing staff, attendants, general workers) are shown in Table 2:

Table 2: Number of staff involved in Catering services

	2022/23		2023/24	
	Funded	In post	Funded	In Post
Hospital Administrator Cadre				
Regional Health Services Administrator	5	5	5	5
Health Administrator	11	11	11	11
Health Administrative Assistant	16	16	16	16
	32	**32**	**32**	**32**
Catering Services Cadre				
Catering Manager	-	-	-	-
Senior Catering Officer	5	5	5	5
Catering Officer	5	4	6	6
Catering Officer (ex SPI)	1	-	-	-
Assistant Catering Officer	5	5	6	1
Catering Supervisor	10	3	10	9
Senior Cook	7	7	8	8
Cook (on roster)	142	137	150	132
	175	**161**	**185**	**161**

Source: Ministry of Health and Wellness and Budget Estimates 2023-2024

2.7 Current System

There are 12 catering units at 5 Regional Hospitals, and 5 Specialised Hospitals and 2 District Hospitals as shown below:

Table 3: Number of Catering Units

SN.	Regional Hospital	Specialised Hospital	District Hospital
1.	AG Jeetoo Hospital	Brown Sequard Hospital	Mahebourg Hospital
2.	SSRN Hospital	S.Bharati Eye Hospital	Souillac Hospital
3.	SAJ Hospital	Poudre D'or Hospital	
4.	Victoria Hospital	ENT Hospital	
5.	JN Hospital	New Cancer Centre	

Procurement of bread, vegetables, eggs and frozen foodstuffs (yoghurt, chicken thigh, chicken breast, sliced tum and headless white fish) are centralised and supplied directly by the suppliers to the catering unit. Other foodstuffs are taken on a daily basis from the General stores.

2.8 Roles and Responsibilities

The roles and responsibilities of key staff involved in the management of catering services, as per their scheme of service, are described in the Table 4.

Table 4: Roles and Responsibilities of Key Staff

SN.	Key Staff	Ministry/ Department	Main Responsibilities
1.	Regional Health Director (RHD)	Hospital	To be responsible for the efficient administration and delivery of quality health services in a Regional hospital and its annexed health institutions
2.	Chief Hospital Administrator (CHA)	Ministry	To contribute effectively to the formulation and implementation of policies for the non-medical aspects of administration and the management of hospitals and annexed health institutions and to coordinate the administration of the related services and ensure their efficient delivery.
3.	Deputy Chief Hospital Administrator	Ministry	To assist in the non-medical aspects of administration and the management of hospitals and annexed health institutions and to coordinate the administration of the related services and ensure their efficient delivery. To supervise and coordinate the work of the Regional Hospital Services Administrator and Hospital Administrators and to provide relevant guidance and advice To contribute to the proper functioning of health services including transport, stores, catering and other logistic support.
4.	Regional Hospital Services Administrator (RHSA)	Hospital	To ensure the effective delivery of the catering services to meet the needs of health institutions.
5.	Catering Manager	Ministry/ Hospital	To be responsible for the efficient and effective management of the catering services in hospitals and annexed institutions. To assist in the drafting of protocols and procedure manuals relating to control and management of quality food services.

SN.	Key Staff	Ministry/ Department	Main Responsibilities
			To carry out surveys on customer/ patient satisfaction.
6.	Hospital Administrator (HA)	Hospital	To be responsible to the RHD through the RHSA and the CHA for: • non-medical aspects of administration of hospitals under his charge and annexed health institutions; and • organising a proper internal system of control of the catering, procurement and supply and other divisions falling under his responsibility
7.	Hospital Administrative Assistant (HAA)	Hospital	To assist the RHSA and HA in the organisation and proper control of catering services To enquire into complaints received, to make recommendations thereon and to ensure implementation of decisions. To record complaints of patients or visitors and to ensure, where necessary, that remedial action is taken.
8.	Nutritionist/ Senior Nutritionist	Ministry	To advise on the nutritional standard of the hospital's general food services and ensure that the prescribed diets are prepared and supplied to the patients
9.	Senior Catering Officer	Hospital	To be responsible to the RHSA through the Hospital Administrator for: • organising, planning and monitoring the work of subordinate staff; • ensuring quality and safety of food preparation; • supervising kitchen works; • preparing specifications for the purchase of equipment; • menu planning and presiding committees related thereto and monitoring hygiene in the area where posted; and • ensuring training of all catering staff

CHAPTER THREE

FINDINGS AND RECOMMENDATIONS

This chapter presents the findings on the adequacy of the measures taken by the Ministry in providing efficient catering services to ensure that patient nutritional needs are met while maintaining high standards of hygiene and food safety, quality and patient satisfaction.

3.1 Introduction

Catering services are important to patient care as good-quality, nutritious meals are vital in patients' rehabilitation and recovery. An effective catering service depends on sound planning and coordination of several processes such as procurement, menu planning, food preparation and distribution of meals to wards and patients.

An assessment of the catering services identified 5 major deficiencies that hindered their efficient operation, namely:

1. Lack of established guidelines and Standard Operating Procedures;
2. Inadequate monitoring and oversight;
3. Non-compliance with food hygiene and safety;
4. Inadequate nutritional assessment and meal planning; and
5. Inefficient use of funds.

The audit objective has been formulated as audit questions and the findings are presented as follows:

Section A – Governance
Section B – Food Hygiene and Safety
Section C – Nutritional Assessment and Meal Planning
Section D – Use of Funds

SECTION A – GOVERNANCE

Audit Question: *Were there policies, guidelines or standard operating procedures for the proper management of catering services?*

What NAO Found

- *Food hygiene and safety are mandated by law for the whole food industry. The Ministry has not developed specific guidelines tailored exclusively for public hospitals. Key elements of food safety and hygiene required by law were not adapted into practical guidelines for use by hospital food service staff.*
- *There were no comprehensive standard operating procedures to direct the operations of hospital catering services including food preparation, safety and quality control in the kitchen; nor was there guidance on the decision-making process for catering services or the roles of those involved.*
- *The existing Food Regulations lacked any provisions addressing the management of food waste in hospitals, leaving hospitals without formal guidelines for leftover management, waste reduction and disposal.*

What NAO recommends

- *The Ministry and Hospital Administrations need to develop comprehensive hospital-specific Operational Guidelines comprising food hygiene and safety requirements as stated in the law and a description of the function of the processes such as procurement, menu planning, food preparation and distribution of meals to wards and patients. These should detail tasks, workflows, and procedures, aligned with the scheme of service but providing practical, actionable instructions for daily operations.*
- *Hospital Administrations must identify the sources and causes of food waste and implement effective strategies to minimise same and to ensure transparency, they are required to monitor and report on food waste by type through the publication of this data.*

3.2 Lack of Guidelines and Standard Operating Procedures to ensure Compliance

3.2.1 Lack of hospital-specific guidelines derived from the law for public hospitals

Criteria: Best practices in legislative and regulatory development (Appendix II refers) generally recommend that laws should be accompanied by policies and guidelines for effective implementation. This approach is widely accepted in various fields to ensure clarity, compliance, and consistency. Here are a few reasons and sources that outline these best practices:

- ***Clarity and Understanding***: Laws are often broad and may lack specific details. Policies and guidelines help interpret the law, providing clear instructions for implementation.
- ***Consistency***: Guidelines help standardise procedures across different regions and organisations, ensuring that the law is applied consistently.
- ***Compliance and Enforcement***: Clear policies and guidelines aid in the enforcement of laws by providing measurable standards and procedures.
- ***Efficiency***: Policies streamline processes and reduce ambiguity, making it easier for individuals and organizations to comply.

Situation Found

- Food hygiene and safety are mandated by law. The Food Act 2022 applies across the entire food industry, encompassing hotels, restaurants, and hospitals. However, the Ministry did not develop specific guidelines tailored exclusively for public hospitals. There was no guideline that incorporated key elements of food safety and hygiene. Countries like UK, Australia, India, Seychelles and Singapore have translated their policies/ guidelines from laws and regulations (Appendix III refers).

  There was not enough clarity in some areas, for example, at the Ninth schedule paragraph 1(g) of Food Regulations 2024, it does not define cross-contamination, its types, or provide guidance on how to prevent it within food handling regulations.

- During surveys conducted by NAO, it was noted that several patients were consuming home-cooked food. However, there was a lack of clear guidelines on whether home-cooked meals are allowed for inpatients.

Consequence: This lack of clarity underscored the need for guidelines with specific rules tailored for hospitals. The current situation may lead to food wastage and patients not consuming food according to their clinical needs and affect areas such as food handling and leftover management.

3.2.2 No standard operating procedures for managing patient meal services in hospitals

Criteria: As per the Financial Management Kit, a Standard Operating Procedures Manual on operational procedures must be prepared for a department, that is, the catering services in this case. A standard operating procedures manual outlines specific, step by step instructions for performing a task or process consistently.

Situation Found: There was neither comprehensive standard operating procedures to direct the operations of hospital catering services, including procurement, food preparation, safety and quality control in the kitchen, menu planning, distribution of food, nor a guidance on the decision-making process for catering services.

In November 2023, the regional hospitals established procedures or protocols for the receipt and storage of foodstuffs at the Ministry's request.

Consequence: Daily catering services were provided but without effective management oversight on compliance of food hygiene and safety standards, food quality, wastage and costs. During surveys carried out by the NAO team, it was noted that, in some cases, food was being served by attendants instead of nurses or ward managers. Food serving requires knowledge of portion size according to the diet scale and food handling practices.

3.2.3 No guidelines and regulation for the management of food waste in hospitals.

Criteria: According to the National Health Service (NHS) - National Standards for Healthcare food and drink[11], hospitals must monitor food waste, manage any waste produced and take action to reduce the food waste produced in the plate waste, production waste and unserved food.

Situation Found: Hospitals generated 3 primary types of food waste: production waste, plate waste and unserved meals (Figures 1-7 at Appendix IV refer). Food production was guided by a daily diet sheet, with quantities calculated based on portion sizes specified in the diet scale and allowing a margin for new admissions and additional orders. The quantity of food waste generated was not reported.

All prepared food was distributed to the wards, thus minimising food waste at the production stage. Therefore, food waste was rather generated in the wards. During surveys carried out by the NAO team, plate wastes were found in bins and there were unserved meals remaining after distribution. It was noted that plate wastes were not monitored and unserved meals were reheated and served to new admissions. Interviews with the ward managers revealed the absence of a written protocol to guide staff on managing leftovers.

Additionally, there were no provision in the current Food Regulations addressing the management of food waste in hospitals and consequently no formal guidelines for leftover management, waste reduction and disposal in hospitals (Para 2.2.1 refers) were available.

Consequence: The absence of such protocol can have a significant impact on the patient's healing process as improper cooling of cooked food or reheating can cause foodborne illness.

Moreover, hospitals did not have a structured approach to minimise food waste causing inefficiencies in catering operations and potential environmental impacts.

The absence of regulations can hinder efforts to monitor, reduce, and recycle food waste, resulting in increased costs and missed opportunities for sustainable practices.

[11] NHS is the publicly funded healthcare system of the United Kingdom and is respected throughout the world for the standard of care it gives to patients. It actively engages in international health activities and collaborates with WHO on various global health initiatives.

Root Cause

Hospital catering service is classified as an allied service rather than an essential or a priority service. As a result, there is a lack of strategic focus, incentive, and commitment from the Ministry and Hospital Administrations to establish comprehensive guidelines and Standard Operating Procedures**.**

Recommendations

1) The Ministry needs to develop guidelines and comprehensive Standard Operating Procedures. These should detail tasks, workflows, and procedures, aligned with the scheme of service of staff, providing practical, actionable instructions for daily operations. The guidelines should also include a procedure for home-cooked food (Para 3.5.3 refers). These need to be aligned with the Mauritius Food Act and Regulations and international best practices.

2) Reducing food waste can redirect funds to enhance food services, thus improving patient care. Hospital Administrations must identify the sources and causes of food waste and implement effective strategies to minimise same. Additionally, they are required to monitor and report on food waste by type, ensuring transparency through the publication of this data.

Ministry's Response

The Ministry will consider developing Standard Operating Procedures and guidelines regarding hygiene and safety requirements as stated in the law.

Audit Question: *Was there proper monitoring and oversight to ensure efficient and effective catering services?*

What NAO Found

- *The Ministry and Hospital Administrations did not establish key performance indicators to assess the efficiency and effectiveness of catering services. Additionally, food and staff costs data were not readily available.*
- *Regular performance reporting by Hospital Administrations on the provision of catering services to patients was not consistently conducted and forwarded to the Ministry. Instead of scheduled, proactive performance meetings, hospital service updates were provided to the Ministry only on an ad-hoc basis, typically when issues or complaints arose.*

What NAO recommends

The Ministry needs to identify the key performance indicators of hospital catering services to measure its outcome and set up reporting mechanisms to demonstrate accountability.

3.3 Inadequate Monitoring and Oversight to ensure Efficient and Effective Catering Services

Best practices in hospital catering emphasise the importance of continuous oversight and monitoring to ensure compliance with food safety standards, quality, patient satisfaction, and cost-effectiveness.

3.3.1 No Performance Indicators on Hospital Catering Services

Criteria: Key Performance Indicators[12] (KPIs) are designed to help organisations understand how well they are achieving their goals and objectives. By regularly monitoring KPIs, organisations can identify areas for improvement, make informed decisions, and measure their progress over time. KPIs are an effective tool to anticipate and prevent low-quality food service for patients.

Situation Found: The Ministry and Hospital Administrations did not establish KPIs to assess the efficiency and effectiveness of catering services. Consequently, statistics related to food services were not included in the Health Statistics Report. Additionally, food and staff cost data was not readily available.

For budgetary purposes, the Ministry requested catering units to submit the cost per meal (Para 3.6.1 refers) and the number of inpatients on an annual basis. However, essential data to assess the performance and outcomes of catering services were not compiled. Relevant KPIs that could have been used to assess performance include:

- Patient Satisfaction on Patient Food Services (number of complaints);
- Number of Food Related Incidents (cases of food poisoning, instances of false diet distribution, non-serving/ inadequate serving complaints) and overall food safety;
- Timely Patient Food Delivery;
- Patient Plate Waste (wastage and pilferage incidences); and
- Health inspection ratings.

Consequence: The absence of these critical performance measures limits the Ministry's ability to evaluate and make data-driven decisions to improve the efficiency, safety, and quality of hospital catering services.

3.3.2 No Regular Performance Reporting

Criteria: Performance reporting is essential for evaluating how effectively hospital services meet patients' needs and for assessing the quality of services against established targets and objectives. Through regular reporting, areas for improvement can be identified, allowing hospitals to enhance the quality of care and align services with the Ministry's standards for patient care.

[12] Hospital Food service Key Performance Indicators – International Journal of Advance Research, Ideas and Innovations in Technology (Volume 5/ Issue 3) www.ijariit.com

Situation Found: Hospital Administrations did not regularly report on the performance of the provision of catering services to patients. Instead updates on hospital service were provided to the Ministry on an ad-hoc basis, more specifically, when there were complaints.

Consequence: This approach made it difficult for the Ministry to oversee the quality of catering service, track progress and ensure that appropriate corrective actions were promptly taken to improve catering services.

Root Cause

The Ministry and Hospital Administrations did not establish a comprehensive mechanism to oversee and monitor the catering activities.

Recommendations

1) The Ministry and Hospital Administrations need to identify and establish KPIs of hospital catering services to monitor and track progress regularly which will align with the objective of performance-based budgeting.

2) The Ministry needs to set up reporting mechanisms for accountability purposes to ensure that hospitals are providing quality catering services as expected.

Ministry's Response

The Ministry will consider working on the Key Performance Indicators.

SECTION B – FOOD HYGIENE AND SAFETY

Audit Question: *Was the monitoring of food hygiene and safety practices adequate?*

What NAO Found

- *Food hygiene and safety practices, set under the Food Regulations, were not implemented despite inspections carried out by Public Health Officers and the Infection Prevention Control Unit.*
- *During surveys carried out by the NAO team, it was noted that in some cases, vegetables stored in chilled rooms were not fresh.*
- *Inspections carried out by Public Health Officers were not regular due to a shortage of staff, making it difficult for them to cover the entire food industry. Inspections were also limited to the maintenance and cleanliness of the kitchen only.*

What NAO recommends

Hospital Administrations need to establish a control framework covering all stages of the catering service process from procurement, food preparation, distribution to the patient's plate and feedback.

The Ministry and Hospital Administrations need to prepare a comprehensive monitoring checklist to ensure consistency in monitoring in all hospitals.

3.4 Non-compliance with Food Hygiene and Safety

3.4.1 Food hygiene and safety practices not implemented

Criteria: Food Hygiene and Safety is regulated under the Food Regulations 2024. The Public Health and Food Safety Inspectorate Unit (PHFSIU), mandated by MoHW, is responsible for ensuring compliance with the Food Regulations.

Infection Prevention and Control units have been set up in each regional hospital to monitor and control infections which includes monitoring of hygiene in the kitchen. The units use the WHO Infection Prevention and Control[13] (IPC) Assessment Tool to ensure implementation of IPC.

Situation Found: During surveys carried out by the NAO team in the catering units of the 5 regional hospitals, it was noted that proper food hygiene practices were not implemented, as shown in Table 5.

[13] According to WHO, IPC is a clinical and public health specialty based on a practical, evidence-based approach which prevents patients, health workers, and visitors to healthcare facilities from being harmed by avoidable infections, including those caused by antimicrobial-resistant pathogens, acquired during the provision of healthcare services.

Table 5: Food Hygiene and safety practices not implemented

Section	Food Regulations 2024	Observations
36 (2d)	Food not to be exposed to contamination	Flies were seen in the kitchen. Insect nets were not installed at Sir Aneerood Jugnauth Hospital (SAJH) (Figures 14-15 at Appendix IV refer)
37	Equipment not to constitute hazard to health	Burnt utensils were found at SAJH due to uneven high gas flames Plastic jugs were used for soup and tea. The reason provided by the Senior Catering Officers was that steel utensils' handles were not appropriate as they were too hot.
39(a)	Cleanliness	Floor was dirty during preparation of meals but nevertheless cleaned after preparation (Figure 17 at Appendix IV refers). There was no proper drainage at SAJH. Hot rice water was spilling on the floor (Figure 17 at Appendix IV refers).
39 (c)	Cleanliness	Utensil containing rice was uncovered, exposed to flies, and kept on the floor at SAJH.
48	Food Handler's Certificate	Food trolleys were transported by attendants who also carried out cleaning duties in wards. These attendants also assist in serving food but do not hold Food Handling certificates.
48	Food Handler's Certificate	In case of a reduced number of cooks in the kitchen, vegetable cutting was done by General Workers who also carried out cleaning duties in hospitals (Figure 13 at Appendix IV refers). General Workers do not possess Food Handling certificates.
49	Personal Hygiene	Cooks at Jawaharlall Nehru Hospital were seen with perspiration running down their faces because of lack of proper ventilation in the kitchen.
55	Perishable food to be kept at adequate temperature	Kitchen Waste bins were seen kept near cooking area instead of a sluice with temperature control. SSRN hospital is a good example where a separate room has been dedicated to store kitchen waste with temperature control.
61(e) (i)	Sanitary practices in cold room	Temperature readings of cold rooms were not continuously recorded.
35 Ninth schedule	Building facilities	The Kitchen at SAJH was not designed to ensure standards of food safety • The fish/chicken and vegetable preparation areas were not separate to prevent cross-contamination. • The dish wash area was accommodated for fish/chicken preparation. • Pot wash (Indian style) was installed. Food waste accumulated in the basin. (Figure 18 at Appendix IV refers)
Not regulated		Different methods of thawing were being used. At JNH, poultry and fish were thawed under running water, while at SAJH, they were dipped for a while in water and afterwards left exposed in the sink.

Consequence: Poor hygiene and food safety practices can lead to foodborne illnesses and potentially worsening existing patient conditions, extending hospital stays, increasing the need for medical intervention, hence increasing healthcare costs.

3.4.2 Use of non-fresh vegetables

Criteria: International organisations such as WHO, FAO, NHS and the USDA[14] recommend fresh vegetables for hospital meals due to their health benefits. Fresh vegetables contain vital vitamins and minerals that degrade over time as they spoil, meaning a patient will not receive the full nutritional value.

Situation Found: During surveys carried out by NAO at the catering units, some cases of non-fresh vegetables stored in chilled rooms were noted (Figures 9-12 at Appendix IV refers). Hospital Administrations did not ensure that the procurement of fresh vegetables was prioritised and that stored vegetables were regularly inspected to prevent spoilage and contamination.

Consequence: If a vegetable stored for a patient is not fresh, it can potentially lead to food wastage.

3.4.3 Lack of regular monitoring of food hygiene in catering units

Criteria: Regular monitoring of food safety practices, including hygiene, temperature control, and food handling procedures, is essential to prevent foodborne illnesses and ensure the safety of hospital patients.

Situation Found

- Monitoring by Public Health Officers was not carried out on a regular basis.

It was noted that Public Health Officers monitored mainly the maintenance and cleanliness of the catering units. During the period from January 2023 to December 2024, the number of inspections conducted and food samples collected at Jeetoo Hospital (JH), Victoria Hospital (VH), and Brown Sequard Hospital (BSH) were on the low side. Conducting routine microbiological testing of food samples helps in early detection of potential contamination.

In November 2023, the Ministry instructed all Regional hospitals to carry out inspections and submit a detailed report with the following requirements:

- Examination of all foodstuffs delivered to Catering Units to be ensured thrice weekly as from 06.00 to 08.45 hrs.
- All hospital premises/catering units to be inspected once weekly during normal working hours.
- To examine all vegetables at the Hospitals at the time of delivery. This exercise should be done at least twice weekly until further notice.

[14] USDA (United States Department of Agriculture) works with international health organizations like WHO to address global food safety, nutrition, and agricultural health issues

However, the inspectors of PHFSIU could not carry out regular inspections as instructed by the Ministry due to a shortage of staff.

- The PHFSIU inspection sheet for Health institutions was not complete and accurate to ensure compliance with Food Act/Regulations/ Public Health Act.

- *Limited scope of IPC inspections* - The Infection, Prevention and Control Unit also carries out inspections in accordance with IPC checklist of July 2023. However, IPCU inspections were limited to hand hygiene, food storage, and pest control in the kitchen. The Unit did not check compliance with the Food Regulations. The number of inspections carried out was not recorded.

Extract from IPC checklist of July 2023

a. *Are all kitchen wastes thrown away in bins that are closed?*
b. *Does the kitchen appear grossly clean to the naked eye and free from spillage?*
c. *Is the kitchen floor mopped at least twice a day?*
d. *Are there no insects and no rodents inside the kitchen?*
e. *Is food stored on racks / cupboards that are closed or inside packs / containers so as not to attract pests?*
f. *Are the refrigerators, ovens and microwaves clean?*
g. *Is a sink available with soap and water?*
h. *Are facilities available to clean utensils?*

Consequence: Poor monitoring may lead to foodborne illnesses affecting patients' well-being.

Root Cause

The Public Health and Food Safety Inspectorate Unit faces a shortage of staff as it oversees the whole food industry. The Ministry and Hospital Administrations did not establish an inspection framework for ensuring an efficient delivery of catering services along with the implementation of food hygiene and safety practices throughout the whole process, that is, from procurement, food preparation and distribution to the patient's plate.

Recommendations

1) To address recurring non-compliance with food hygiene and safety practices, Hospital Administrations, being responsible for ensuring the effective delivery of catering services, need to establish a systematic audit and inspection framework covering all stages of the catering service process from procurement, food preparation, distribution to the patient's plate and feedback.

The Ministry and Hospital Administrations need to prepare a comprehensive monitoring checklist to ensure consistency in the delivery of higher-quality catering services.

2) In addition, the Ministry and Hospital Administrations need to consider:
   - Installing fly nets where necessary;
   - Replacing plastic jugs by aluminium or steel jugs;
   - Installing proper drainage system in the kitchen at SAJH;
   - Providing vegetable cutters to cooks to enhance efficiency;
   - Providing proper ventilation in the kitchen at JNH;
   - Storing kitchen wastes in a sluice with temperature control;
   - Keeping a continuous record of temperature control;
   - Use of safe thawing; and
   - Introducing separate coloured cutting boards, utensils and knives for raw and cooked foods and vegetarian and non-vegetarian. (Appendix V refers)

Ministry's Response

The Public Health and Food Safety Inspectorate Unit agrees that, in general, practices do not change despite numerous inspections and negative remarks and there is an accountability issue.

Food Safety Management practices will be converted into a checklist which will be used by the catering staff daily to ensure that basic food safety principles are being applied at each step, that is, from delivery, cooking to serving of meals in wards.

SECTION C – NUTRITIONAL ASSESSMENT AND MEAL PLANNING

Audit Question: *Were Nutritional assessment and meal planning adequate?*

What NAO Found

- *The Ministry did not have a nutritional or dietary guideline for hospitals, which would provide evidence-based recommendations for healthy eating, particularly focusing on foods and nutrients that were available locally, and which took into consideration chronic diseases.*
- *Nutritionists did not have the appropriate competency to provide therapeutic diagnosis.*
- *The responsibility for meal planning was not clearly defined, as such menu planning was carried out only by the senior catering officer (except for JH).*
- *There was no consistency in meal planning in all hospitals and no meal plans for children in some hospitals.*
- *There was no established process in place to collect and analyse patient feedback and satisfaction.*
- *Food tasting was not carried out to assess the quality of food. During an exercise to obtain feedback, patients complained about the portion size and uncooked food.*

What NAO recommends

- *The Ministry needs to develop hospital dietary guidelines that incorporate locally available food and vegetables to ensure nutrition adequacy and sustainability.*
- *The Ministry needs to ensure the availability of clinical dietitians in hospitals to provide specialised nutritional care as part of therapeutic treatment. Additionally, existing nutritionists should be upskilled through structured training programs.*
- *The Ministry and Hospital Administrations need to ensure that nutritionists are actively involved in menu planning and meal assessment.*
- *Nutritional Plan for each patient needs to be documented.*
- *All hospitals should maintain consistency in meal planning to ensure standardised, high-quality nutritional care that meets the dietary needs of all patients. Additionally, a dedicated children's menu should be integrated across all hospitals to accommodate pediatric patients with age-appropriate, nutritionally balanced meals that support their growth and recovery.*
- *Hospital Administrations need to conduct patient satisfaction surveys to evaluate the quantity and quality of food provided and incorporate feedback into meal planning.*
- *Hospital Administrations need to ensure that food taste is improved through better cooking techniques and seasoning with, for example, more herbs and spices known for their therapeutic properties. These additions not only enhance flavour but also contribute to the overall health benefits of the diet. Hospitals can innovate by integrating Ayurvedic nutrition.*

3.5 Inadequate Nutritional Assessment and Meal Planning

Proper nutrition supports immunity, accelerates recovery times, and helps maintain patients' strength.

Nutritionists/Senior Nutritionists, as per their scheme of service, are called upon to advise on the nutritional standard of the hospital's general food services and ensure that the prescribed diets are prepared and supplied to patients.

According to the code of practice of the Allied Health Professionals Council (Nutritionist) Regulations 2022, a registered nutritionist must, amongst others:

- Be able to advise on safe procedures for food preparation and handling, food processing and menu planning; and the resulting impact on nutritional quality and menu planning; and
- Be aware of catering and administration.

Survey by NAO

During surveys carried out by the NAO team to gather patient feedback, the following complaints were reported:

- Food was not palatable (not pleasant to taste);
- Portion size, specially for packed meals, was not sufficient;
- Meals were cold;
- Meals were not properly cooked – for example, mouth itching from brinjal, uncooked tomatoes in rougaille soya, and chicken was not fully cooked;
- Combination of food was not satisfactory, for example, menu included broad beans and cabbage;
- Same pulse was served continuously – broad beans were served for several days. Senior Catering Officers explained that there was a shortage of other pulses.

3.5.1 Absence of Nutritional Assessment

Criteria: As per the British Dietetic Association (BDA), nutritional assessment is a systematic process of collecting and interpreting information to identify nutrition-related problems and their causes. This differs from nutritional screening, which is a brief risk assessment that can be carried out by any healthcare professional and which may lead to a nutritional assessment by a dietitian.

Situation Found: During visits carried out by NAO team in hospitals, the ward managers and the nutritionists explained that the treating doctor conducted a nutritional screening and prescribed a diet tailored to the patients' medical conditions. There was no mechanism in place to carry out a nutritional assessment of a patient on admission and during his/her stay.

3.5.2 No documented Nutritional Plans

Criteria: Documented nutritional plans ensure proper nutritional care, facilitate communication between healthcare professionals, and help track patient progress.

As per best practices, the dietitian prepares the nutritional plan and the patient receives food accordingly. For patients who prefer homemade food the dietitian ensures that the meal is planned in consultation with the treating doctor and the patient's relative, taking the patient's food habits and likes and dislikes.

Situation Found: During visits by NAO team to hospitals, the ward manager and the nutritionist explained that it was the treating doctor who prescribed whether a patient will require a normal diet or a special diet. Special diet, consists of, light diet (soup), diet for diabetics, no salt diet, Fat-free, high protein, low protein and minced food. The special diet prescribed was recorded in a register by the ward manager.

There was no documented nutritional plan (also known as a diet plan or meal plan) based on the patient's nutritional assessment. There was no assessment of whether the patient's nutritional status had improved. Patients and their families were not involved in the assessment and planning process.

3.5.3 Absence of Nutritional or Dietary Guidelines

Criteria: Australia has developed the Australian Dietary Guidelines (ADG) to ensure adequate intake of essential micro and macronutrients for a healthy population. The ADG and the Australian Guide to Healthy Eating (AGHE) promote food-based eating patterns that aid in the prevention and management of chronic diseases linked to diet.

Situation Found: The Ministry had not formulated any nutritional or dietary guidelines for hospitals, which would provide evidence-based recommendations for healthy eating, particularly focusing on foods and nutrients associated with chronic diseases, such as sodium and saturated fat. According to Nutritionists, the guiding principles of WHO were applied when carrying out menu planning. However, the guidelines had not been customised for food items available locally.

Consequence: There was no mechanism in place to detect foodborne illnesses associated with hospital food service.

3.5.4 Nutritionists were not qualified to provide therapeutic diagnosis

Criteria: Dietitians and nutritionists play a pivotal role in the food services of hospitals by ensuring that patients receive the nutrition they need for recovery and well-being. Their involvement enhances patient care. All dietitians are nutritionists, but not all nutritionists are dietitians. Nutritionist refers to a broader category of professionals that help people to eat healthy, whereas dietitians are nutritionists with specialised training.

According to the Allied Health Professionals Council Regulations 2022,

- A dietitian is a qualified health professional who assesses, diagnoses and treats dietary and nutritional problems at an individual and wider public health level. He/She works with both healthy and sick people to promote good health using the science of nutrition.
- Nutritionists are qualified health professionals who provide information about food and healthy eating.

Situation Found: During a survey carried out by NAO in hospitals, it was noted that Nutritionists were assessing and diagnosing nutritional problems which was the role of Dietitians.

3.5.5 Responsibilities for meal planning not clearly defined

Criteria: According to the British Dietetic Association (BDA), menu planning requires a multidisciplinary approach, involving representatives from all key groups responsible for food provision, including catering, dietetics, and nursing.

As per the scheme of service of the Nutritionist, the latter is responsible for ensuring that the prescribed diets are prepared and supplied to patients. Additionally, a Senior Catering Officer has the responsibility for meal planning.

Situation Found

During visits by NAO team, it was noted that a Menu Plan was prepared by the nutritionist. However, it primarily outlined the rotation of vegetarian, non-vegetarian, fish and chicken meals on specific days. The menu plan was not reviewed regularly. For instance, at JNH the most recent menu dated back to August 2018, while at SSRNH, it was last updated in June 2023. In contrast, at JH, specific menus were prepared and reviewed on a monthly basis.

During interviews, the Nutritionists informed that due to the heavy workload, they were not able to carry out visits in the Catering Units and Wards daily to assess the quality of food and patient satisfaction. Only 2 officers were posted on a part-time basis, that is two half days per week.

3.5.6 Lack of consistency in meal planning

Situation Found

- A revised paediatric menu plan for patients aged 1-16 years was prepared and issued by the Ministry in October 2023. However, the menu was not implemented in hospitals such as JNH and SSRNH.

- Meals were not delivered to patients on time as per the set schedule. Delays of delivery of trolleys were noted from the catering unit at SAJH. Trolleys were released from 11:50 hrs to 12:25 hrs, that is, meals were served to patients between 12:15 hrs and 13:00 hrs instead of the set schedule of 11:00 hrs to 12:00 hrs.

3.5.7 Patient feedback not carried out

Criteria: Measuring patient satisfaction from the patients' point of view is the best way to know the quality of the service provided to them. Feedback is an essential tool for continual improvement, and hence should be monitored. Patients can give their reviews with reference to quality, appearance, plate presentation, temperature, and palatability.

Situation Found

There was no established process in place to collect and analyse patient feedback and satisfaction.

For instance, during the collection of patient feedback at JNH on 30.01.25 by the NAO team, patients complained of receiving only a small piece of shredded chicken instead of a full portion such as a breast or thigh. The ward manager explained that only seven pieces of chicken were received instead of the requested fourteen. However, the Catering officer clarified that she had specifically checked the quantity allocated to this ward, as it had the highest patient count on that day.

The scheme of service of the Catering Manager includes collecting patient feedback. However, as of January 2025, the post was still vacant and unfunded.

Consequence: A lack of feedback mechanism led to patients' dissatisfaction, complaints and reduced meal consumption.

Root Cause

There was no structured approach for nutritional assessment, meal planning and collection of patient feedback.

Recommendations

1) Hospital Administrations need to include nutritional assessment and nutritional plans (also known as diet plans or meal plans) as part of their healthcare standards.

2) The Ministry, through its Nutrition Unit, needs to develop hospital dietary guidelines that incorporate locally available food and vegetables to ensure nutritional adequacy and sustainability.

3) The Ministry needs to ensure the availability of clinical dietitians in hospitals to provide specialised nutritional care as part of therapeutic treatment. Additionally, existing nutritionists should be upskilled through structured training programs to enhance their competencies in clinical dietetics, ensuring improved patient care and dietary management.

4) The Ministry and Hospital Administrations need to ensure that dietitians are actively involved in menu planning.

5) All hospitals should maintain consistency in meal planning to ensure standardised, high-quality nutritional care that meets the dietary needs of all patients. Additionally, a dedicated children's menu should be integrated across all hospitals to accommodate pediatric patients with age-appropriate, nutritionally balanced meals that support their growth and recovery.

6) Hospital Administrations need to conduct patient satisfaction surveys to evaluate the quantity and quality of food provided and incorporate feedback into meal planning.

7) Hospital Administrations need to ensure that food taste is improved through better cooking techniques and seasoning with, for example, more herbs and spices known for their therapeutic properties. These additions not only enhance flavour but also contribute to the overall health benefits of the diet. Hospitals can innovate by integrating Ayurvedic nutrition (Appendix VI refers). Menu tasting needs to be conducted to assess the taste, texture, aroma, and appearance of the food (an example of an evaluation form is at Appendix VII).

8) The Ministry can explore the possibility of hiring the services of a Food Scientist (Appendix VIII refers) to advise on improving the quality of food.

9) To promote healthier cooking and preserving the nutritional value of food, the Ministry can consider investing in equipment such as ovens and steamers (e.g., baking instead of frying fish in oil). The way food is prepared significantly impacts the retention of nutrients. Also, vegetable cutters can be used to enhance efficiency and to reduce food preparation time.

Ministry's Response

- WHO dietary guidelines have been translated into Diet scales. The revised Hospital Diet Scale 2018 included a list of new food items that were introduced to bring more variety to food. The allowances for potherbs and spices were increased to improve and enhance food taste and flavour. Daily Meal planning lies under the responsibility of the Catering Officer. Nutritionists are responsible to vet the meal plan as and when needed.

- All Nutritionists in post have been recruited by the Public Service Commission and have been working in hospital/clinical settings advising patients on therapeutic diets since the establishment of the Nutrition Unit. The scheme of service of Dietitians and Nutritionists are still being worked upon at the level of MoHW, Government Services Employees Association (GSEA), and the Ministry of Civil Service and Administrative Reforms. Currently, all officers of the Nutrition unit are registered as Nutritionist at the level of the Allied Health Professionals Council.

SECTION D – USE OF FUNDS

Audit Question: *Were funds allocated for catering services being used efficiently?*

What NAO Found

- *There was no separate dedicated expenditure for catering services. Consequently, financial information on catering services was not readily available for decision-making purposes.*
- *To modernise food service in hospitals, the Ministry invested Rs 6.7 million for the purchase of 14 trolleys along with some 292,000 food containers. However, due to inadequate planning, the Ministry faced operational challenges such as trolley mobility and workforce allocation leading to inefficiencies in hospital catering operations.*
- *The number of meals in the daily diet sheets was overstated. Food was ordered for patients who brought their own food and for unoccupied beds.*

What NAO recommends

- *The Ministry needs to create a separate expenditure item exclusively for catering services.*
- *Projects need to be properly planned and designed taking into account all the resources needed.*
- *Hospital Administrations need to conduct regular ward surveys to verify the accuracy of daily diet sheets and prevent overstatement, which may lead to excess food being prepared.*

3.6 Inefficient use of Funds allocated for the Provision of Catering Services

Criteria: Catering services expenses include the costs of food, staffing, other indirect costs such as cleaning supplies and a proportion of overhead expenses, for example, utilities, administrative costs and equipment maintenance costs.

3.6.1 Lack of Financial information on Catering Services

Situation Found

1) Expenditure on catering services is classified under Vote 18-102 Hospital and specialised services – Item 22900005: Provision of stores. This item also includes purchases of cleaning tools and materials, stationery and other supplies for the entire hospital.

   The National Audit Office analysed the item and extracted costs related to catering services as detailed in Table 7.

Table 6: Expenditure on Catering Services

		2021/22 Rs	2022/23 Rs	2023/24 Rs
Item 18-102 22900005 Provision of stores				
Initial Estimated Budget		185,000,000	195,000,000	250,000,000
Revised Budget after Reallocation		250,000,000	297,720,000	282,609,023
Actual Expenditure		242,792,753	297,362,376	282,563,915
Out of which:				
Procurement of chicken, fruits, foodstuffs, vegetables (excl. bread, Yoplait, kitchen equipment, food trolley/container)		106,921,571	176,264,615	176,466,397
Procurement of cleaning Tools and materials, stationery and other supplies		135,871,182	121,097,761	106,142,626
		242,792,753	297,362,376	282,563,915

Source: Treasury Accounting System

There was no separate expenditure item for catering services. Staff costs were recorded in the personal emoluments item, while utilities such as water and electricity were allocated to the Utilities item.

2) The Ministry requested all catering units to submit the cost per meal annually for budgetary purposes. During site visits carried out by NAO, it was noted that the Senior Catering Officers had computed the cost per meal based on the material costs only, except for JH, where an estimated amount for staff costs was also included.

Consequences: Financial information on catering services per meal per patient was not readily available for decision-making purposes (Para 3.3.1 refers).

3.6.2 Ineffective Procurement of Food Trolleys

Criteria: The Ministry awarded a contract for the procurement of 14 food trolleys and 292,000 food containers for Rs 6,778,389 (excluding VAT) to provide hot-packed meals to inpatients and modernise food service in hospitals. The objective was to encourage patient consumption of hospital-balanced meals, reduce food waste and achieve time savings in food service.

Situation Found: The project, initiated in January 2024, and implemented in 3 wards of the regional hospitals, pre-natal, neo-natal and paediatric, was still on a pilot basis as of January 2025. During site visits carried out by NAO at regional hospitals, it was noted that the trolleys were too heavy to be moved. Additionally, the implementation required extra staff for food container mounting and setting.

Consequence: The packed meal was transported using normal trolleys and later heated in designated food trolleys. Also, cooks had to mount and set food containers diverting them from their primary duties and occasionally necessitating assistance from General Workers.

In addition, Bruno Cheong Hospital (BCH) was attributed 2 trolleys for packed meals in January 2024. Subsequently, BCH moved to SAJH in August 2024. The construction contract included the provision of equipment and SAJH received new 'dry trolleys[15]' in each ward. Moreover, the 2 trolleys for packed meals could never be installed due to the incompatibility of the electric installations.

The project's failure was attributed to inadequate planning, as it did not account for operational challenges such as trolley mobility and workforce allocation, leading to inefficiencies in hospital catering operations.

3.6.3 Overstated Daily Diet Sheets

Criteria: Ward managers prepared diet sheets twice daily, one for breakfast and lunch and a second one for dinner. Daily diet sheets provide the patient's diet according to the doctor's/ nutritionist's prescription. The different types of diet include Normal, Light, DM (Diabetes Mellitus), No salt, Vegetarian, Fat-free, High protein, Low protein, Minced, Fasting, and Non-consumers. Patients are asked about their preference for vegetarian or non-vegetarian food and whether they will consume hospital food or food from home.

Situation Found: During surprise checks carried out by NAO in the ward pantry, it was noted that there were unserved meals remaining after the distribution of food. Hence, there was no proper ward leftover management.

Information obtained from patient feedback exercise undertaken in the same wards and a comparison of the entries in the daily sheet to the actual distribution of food revealed the following issues:

- Food was ordered for patients who chose to bring their own food. Patients were not asked whether they would consume hospital food or food from home. The reason provided by the ward manager was that patients often changed their mind.
- Food was ordered for unoccupied beds.

Consequence: The number of meals in the daily diet sheets was overstated leading to the preparation of more meals than necessary. This resulted in food waste and inefficient use of funds.

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[15] Dry trolleys are trolleys where food can be heated directly with electricity, that is, without water.

Root Cause

There was no internal monitoring system over catering expenditure, planning and designing of projects, and distribution of food that impacted on fund utilisation.

Recommendations

1) The Ministry needs to create a separate expenditure item exclusively for catering services.
2) Projects need to be properly planned and designed taking into account all the resources needed.
3) Hospital Administrations need to conduct regular ward surveys to verify the accuracy of the number of meals in the daily diet sheets and prevent overstatement, which may lead to excess food being prepared.

Ministry's Response

- Consideration is being given to classify expenditure on catering services under the item Catering rather than the Provision of Stores. A request will be made to the Ministry of Finance accordingly.
- Emphasis was laid more on the objectives of the project. In case the project is extended, the recommendations would be taken into consideration.

CHAPTER FOUR

CONCLUSION

The provision of nutritious and hygienic meals is an essential component of patient care, directly contributing to recovery and overall well-being. Significant financial and human resources are allocated to hospital catering services. With an annual expenditure of some Rs 180 million and a workforce of 160 kitchen staff, it is vital to ensure that catering services are managed efficiently and effectively.

This audit has identified several weaknesses that hinder the efficiency and effectiveness of hospital catering services. The absence of established guidelines and Standard Operating Procedures, inadequate monitoring and oversight, poor adherence to food hygiene standards, weak nutritional assessment practices, and inefficient utilisation of allocated funds undermine the Ministry's objective of ensuring quality patient care through efficient catering services.

To enhance the performance of hospital catering operations, the Ministry and Hospital Administrations must become proactive and adopt a structured approach. They need to implement comprehensive hospital-specific guidelines, strengthen monitoring mechanisms, enforce stricter food hygiene and safety practices, and ensure that nutritional assessment and planning are adequate. Additionally, better financial oversight is required to optimise resource allocation and prevent inefficiencies such as the procurement of unsuitable equipment and mismanagement in the provision patient meals.

Addressing these deficiencies will enhance the efficiency, economy, and effectiveness of hospital catering services. Improved service delivery will lead to greater patient satisfaction, better health outcomes, and more prudent use of public resources. Ultimately, these improvements contribute directly to several Sustainable Development Goals (SDGs), including SDG 2 (Zero Hunger), by promoting access to safe and nutritious food; SDG 3 (Good Health and Well-being), by supporting patient recovery through adequate nutrition; and SDG 12 (Responsible Consumption and Production), by fostering sustainable practices in food procurement and waste management.

In light of these strategic implications, it is recommended that the Ministry take necessary corrective actions to establish a robust and sustainable framework for the management of hospital catering services. This framework should be aligned with national healthcare standards and international best practices, ensuring that the catering system not only meets the nutritional needs of patients but also supports the goals of sustainable development.

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APPENDIX I

SDGS LINKAGE WITH CATERING SERVICES IN HOSPITALS

SDGs		Key aspects
Key SDG Linkages		
SDG 2	Zero Hunger	Hospital catering is crucial in ensuring access to nutritious food for patients, which is essential for their recovery and well-being. By offering sustainable and healthy meal options, hospitals can contribute to combating hunger and promoting sustainable food systems.
SDG 3	Good Health and well-being	Hospital catering directly impacts patients' health and well-being through the food they consume. By providing nutritious and healthy meals, hospitals can support patient recovery and improve overall health outcomes. Additionally, promoting sustainable eating habits can contribute to public health and well-being beyond the hospital setting.
SDG 12	Responsible consumption and production	Hospital catering, like other food systems, generates waste and has environmental impacts. By implementing sustainable practices like reducing food waste, sourcing locally, and using environmentally friendly packaging, hospitals can contribute to responsible consumption and production.
Others		
SDG 6	Clean water and sanitation	Ensure the availability and sustainable management of water and sanitation for all. • Safe food handling practices in hospitals depend heavily on clean water and good sanitation. • Preventing cross-contamination and maintaining clean food preparation areas supports broader hygiene and infection prevention goals.
SDG 9	Industry, Innovation and Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation: Hospitals with modern kitchen facilities and innovative food safety monitoring systems (e.g., HACCP, temperature control, digital logs) contribute to this goal.
SDG 10	Reduced Inequalities	High-quality, safe food services in public hospitals promote equitable access to nutrition and healthcare, especially for low-income populations who rely on public healthcare.
SDG 16	Peace, Justice and strong institutions	• Target 16.6: Develop effective, accountable, and transparent institutions. • Regular audits of hospital catering services to ensure food safety, quality, and patient satisfaction promote good governance and accountability in public service delivery.
SDG 17	Partnerships for the Goals	Strengthen the means of implementation and revitalise the global partnership for sustainable development: Collaboration among healthcare providers, nutritionists, food suppliers, and regulatory authorities helps maintain food quality and safety, aligning with multi-stakeholder partnership principles.

Source : NAO Analysis adapted from United Nations Sustainable Development Goals

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APPENDIX II

BEST PRACTICES IN LEGISLATIVE AND REGULATORY DEVELOPMENT

SN.	International Organisations	Criteria
1.	World Health Organisation (WHO)	WHO provides extensive guidelines for implementing health-related laws, ensuring that policies are aligned with legal frameworks to improve public health outcomes.
2.	International Organisation for Standardization (ISO)	ISO emphasises the importance of documented policies and procedures for implementing laws, especially in quality management (ISO 9001) and environmental management (ISO 14001).
3.	Organisation for Economic Co-operation and Development (OECD)	In its "Best Practice Principles for Regulatory Policy and Governance," OECD states that clear guidelines and policies are essential for the implementation of laws and regulations.
4.	United Nations (UN)	The UN guidelines on policy development stress the need for comprehensive implementation frameworks to ensure the objectives of laws are achieved.
5.	World Bank and International Monetary Fund (IMF)	Both institutions advocate for the use of policies and guidelines to support legal reforms and ensure effective implementation of regulatory frameworks in their "Good Practices in Policy Formulation and Implementation."

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APPENDIX III

LAWS, POLICIES, GUIDELINES AND STANDARD OPERATING PROCEDURES IN OTHER COUNTRIES

SN.	Countries	Laws	Main Relevance to Hospital Catering	Policies/Guidelines	Description	SOPs
1.	UK	Health and Social Care Act 2012 Food Safety Act 1990 Food Hygiene (England) Regulations 2013 Environmental Protection Act 1990	NHS organisations must ensure the quality of services, including catering and nutrition. Covers food quality, safety, hygiene in hospital kitchens and food preparation areas. Requires hospital kitchens to meet strict hygiene standards. Waste management relating to catering (food waste).	NHS Food standards Nutrition and Hydration Digest Care Quality Commission (CQC)s Fundamental standards NHS England Catering Services standards PLACE Assessments (Patient-Led Assessments of the Care Environment)	Hospitals must meet nutrition, hydration, food safety, choice, and sustainability standards. Professional guidelines on meal provision and planning in hospitals. Sets out what good nutrition and catering should look like, linked to inspections. Standardisation of menus, supplier audits, food safety processes. Patients evaluate hospital food, environment, and choice.	Menu Planning Food Procurement Food preparation and hygiene Patient meal service Allergen and special diet management Staff training Waste management Incident Reporting
2.	Australia	Food Standards Australia New Zealand (FSANZ) Standard 3.2.2	**Food Safety Practices and General Requirements**: Mandates safe food handling practices, including hygiene, temperature control, and contamination prevention.	Healthy choices policy	**Policy Directive**: Mandates that Victorian public health services provide and promote healthier food and drink options in retail outlets, vending machines, and staff/event catering.	Food safety management (HACCP) Menu Planning Procurement Processes

SN.	Countries	Laws	Main Relevance to Hospital Catering	Policies/Guidelines	Description	SOPs
		Standard 3.2.1 Standard 3.3.1 Statutory and Territory Food Acts	**Food Safety Programs**: Requires high-risk food businesses, such as hospitals serving vulnerable populations, to implement documented food safety programs. **Food Safety Programs for Food Service to Vulnerable Persons**: Specifically addresses food safety requirements for services providing food to vulnerable groups, including hospital patients. Each Australian state and territory enacts its own Food Act, aligning with the FSANZ Code, to regulate food safety within its jurisdiction. These acts empower local health authorities to enforce compliance in public hospitals.	Nutrition and Food Quality Standards (Victoria) Food Service Best Practice Guidelines (Queensland Health)	**Policy Guidelines**: Offer detailed implementation strategies, including the traffic light system categorizing foods as GREEN (healthy), AMBER (moderate), or RED (unhealthy). **Adult and Paediatric Standards**: Provide comprehensive nutritional guidelines for meals served to patients in Victorian public hospitals and aged care facilities, emphasising cultural diversity, dietary needs, and alignment with the Australian Dietary Guidelines These guidelines provide best practice recommendations for hospital food services, focusing on: • Menu planning and nutritional standards; and • Food production and distribution systems Quality assurance and continuous improvement processes. This document sets out nutrition standards to assist in menu	Staff Training

SN.	Countries	Laws	Main Relevance to Hospital Catering	Policies/Guidelines	Description	SOPs
				Nutrition Standards for meals and menus (Queensland Health)	planning for hospitals and aged care facilities. It includes: • Nutritional requirements for different patient groups; • Portion sizes and meal component guidelines; and • Menu planning checklists.	
				Hospital Food Service – Allergen Best Practice Guideline	This guideline focuses on managing food allergies within hospital food services, providing: • Procedures for identifying and managing allergen risks; • Staff training recommendations; and • Documentation and communication protocols.	
3.	India	Food Safety and Standards Act 2006	It established the Food Safety and Standards Authority of India (FSSAI), which sets standards for food products and oversees their compliance. Under this Act, all food business operators, including hospital kitchens and catering services, must obtain appropriate registration or licensing based on their scale of operations	FSSAI Guidelines for catering	FSSAI has issued specific guidelines for catering services, emphasising hygiene and safety	Indian Council of Medical Research SOPs for the procurement, hiring, and outsourcing of services, including catering, in medical institutions. Hospital specific SOPs covering: • Food procurement • Storage and preparation • Distribution • Waste management
				State-specific guidelines	States like Kerala have implemented additional guidelines to enhance food safety in catering services.	
		Food Safety and Regulations Standard 2011	These regulations detail the procedures for licensing and registration of food businesses. Hospitals serving food must adhere to these regulations, which include hygiene standards, infrastructure	Indian Health Facility Guidelines 2014		

SN.	Countries	Laws	Main Relevance to Hospital Catering	Policies/Guidelines	Description	SOPs
			requirements, and staff training mandates.			
4.	Seychelles	Food Act 2014 Public Health Act 2015	It outlines the responsibilities of food business operators, including those in hospital catering services, to comply with food safety standards. This act provides a framework for public health protection, including regulations related to food hygiene and safety in public institutions such as hospitals.	National Health Policy 2015 National Food and Nutrition Security Policy 2014 National Health Strategic Plan 2022-2026	It advocates for strengthening food control systems and aligning with international standards like the Codex Alimentarius. This policy aims to ensure access to safe, nutritious, and culturally appropriate food for all citizens. It promotes inter-sectoral collaboration to address food security and nutrition challenges. This strategic plan outlines objectives for improving health services, including the development and adherence to guidelines and Standard Operating Procedures (SOPs) in healthcare settings	Menu planning Food procurement and storage Meal preparation and hygiene Patient meal service Waste management Allergen and Special Diet Management
5.	Singapore	Healthcare Services Act (HCSA) 2020 Private hospitals and mediclinics Regulations	The HCSA provides the overarching legal framework for healthcare services in Singapore, including public hospitals. It mandates compliance with specific regulations and licensing conditions to ensure safe and effective healthcare delivery. Under Regulation 22, licensed healthcare institutions must ensure that food preparation and serving	Food Safety Management System (FSMS)	The Singapore Food Agency (SFA) requires all caterers, including those providing services to hospitals, to implement a Hazard Analysis Critical Control Point (HACCP)-based FSMS. This system focuses on identifying and controlling food safety hazards throughout the food handling process.	Food preparation and Handling Staff training Menu planning Monitoring and auditing

SN.	Countries	Laws	Main Relevance to Hospital Catering	Policies/Guidelines	Description	SOPs
			areas meet the same hygiene standards as commercial food establishments. This includes the appointment of a Food Hygiene Officer to oversee food safety practices	Whole of government Healthier catering policy	Introduced by the Health Promotion Board (HPB), this policy mandates that all food and beverages provided at government premises, including hospitals, adhere to healthier standards.	
				EatSafe SG Iniative	Launched by the Ministry of Health (MOH), EatSafe SG aims to standardise diet and fluid terminologies across healthcare institutions to enhance patient safety, especially for those with dysphagia. It provides resources such as the EatSafe SG Handbook and training frameworks for healthcare professionals.	

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APPENDIX IV

OBSERVATIONS DURING SURVEYS

Fig 1 Plate waste: food discarded in bin by patients at JH

Fig 2 Plate waste: food being discarded in bin by patient at JNH

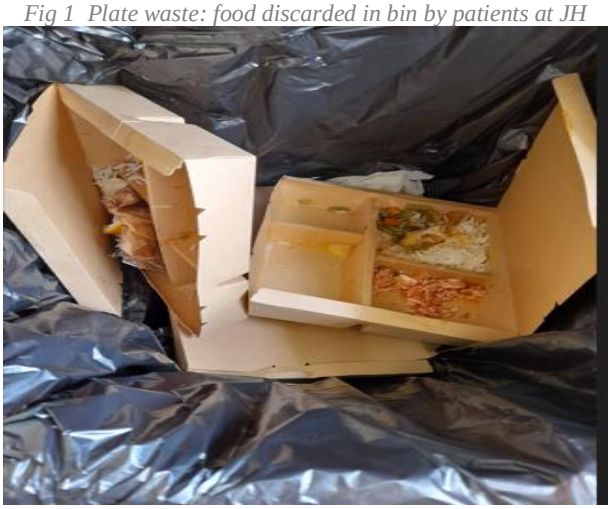

Fig 3 Plate waste: food discarded in bin at JNH

Fig 4 Leftovers: Unserved meals at SAJH

Fig 5 Leftovers: Oranges remaining after distribution to patients at SAJH

Fig 6 Leftovers: Packed meals remaining after distribution at JH

OBSERVATIONS DURING SURVEYS

Fig 7 Leftovers: Unserved fruit JH

Fig 8 Leftover kept in the refrigerator at VH

Fig 9 Non-fresh vegetable: Overripe Bitter gourd at VH

Fig 10 Non-fresh vegetable: Green bean was not fresh at VH

Fig 11 Vegetables exposed in NCD workshop were returned and stored in the kitchen at VH

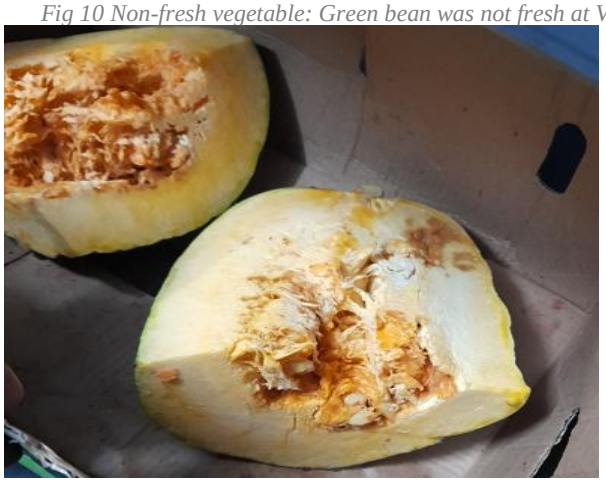

Fig 12 Non-fresh vegetable: Pumpkin was not fresh at VH

OBSERVATIONS DURING SURVEYS

Fig 13 Food Hyguene and Safety: Vegetable cutting by General workers and Waste Bin kept in cooking area in the absence of a scullery

Fig 14 Food Hygiene and Safety: Flies seen in kitchen at SAJH as fly nets were not installed

Fig 15 Food Hygiene and Safety: Fly Nets were not installed at SAJH

Fig 16 Food Hygiene and Safety: No proper drainage system-hot water spilling on the floor at SAJH

Fig 17 Food Hygiene and Safety: Dirty floor at JNH at the time when cooks were busy cooking

Fig 18 Food Hygiene and safety: Pot wash (Indian style) was installed where Food waste got accumulated in the basin

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APPENDIX V

SEPARATE COLOURED CUTTING BOARDS FOR CROSS-CONTAMINATION PREVENTION

For cross-contamination prevention, separate coloured cutting boards, utensils and knives should be used for raw and cooked foods either vegetarian and non-vegetarian.

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APPENDIX VI

AYURVEDIC NUTRITION

Ayurvedic dietary recommendations often include the use of specific herbs and spices known for their therapeutic properties. These additions not only enhance flavour but also contribute to the overall health benefits of the diet.

Herbal supplements and spices play a significant role in Ayurveda, offering various health benefits and supporting balance within the body. Different herbs and spices are often used based on an individual's specific health needs. Some of the commonly used herbal supplements and spices in Ayurveda include turmeric, ashwagandha, triphala, brahmi, amla, tulsi, cumin, coriander, ginger, cardamom, and fenugreek.

Ayurveda, the ancient Indian system of medicine, is not a new concept in Mauritius. Since 2004, Ayurvedic services, such as panchkarma therapy, yoga, and ayurvedic medicine, have been integrated in the local healthcare system offering holistic treatment options to the population.

In a significant global development, the United Kingdom is now set to incorporate Ayurveda into its National Health Service. This move follows a thorough review and recommendation by Britain's All-Party Parliamentary Group, which recognised Ayurveda as an effective healthcare practice[16].

[16] *Source: https://ebnw.net/history/ayurveda-finds-a-prominent-spot-in-britains-healthcare-system/*

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APPENDIX VII

EVALUATION FORM TO CARRY OUT TASTING

APPENDIX 1: NHS Tayside Caterers Standard Recipe Evaluation Form

NHS Tayside - Caterers Standard Recipe Evaluation Form

Recipe Name		Recipe Code	
Chef / Name		Date	

Instructions: Please complete in full by ticking analysis box for each evaluation factor. Please write clearly any comments, suggestions or recommendations.

Evaluation Factor	Your Analysis Poor←------→Excellent	Comments / Suggestions
Appearance	☐ ☐ ☐ ☐ ☐	
Taste	☐ ☐ ☐ ☐ ☐	
Texture	☐ ☐ ☐ ☐ ☐	
Aroma / Smell	☐ ☐ ☐ ☐ ☐	
Ingredients	☐ ☐ ☐ ☐ ☐	
Yield	☐ ☐ ☐ ☐ ☐	

Other Recommendations, Important or Relevant Information

Source: UK Standard Operating Procedure

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APPENDIX VIII

ROLE OF A FOOD SCIENTIST IN FOOD SERVICE

Food Science Roles in Foodservice

Food science is an interdisciplinary field that focuses on the physical, biological, and chemical properties of food, including its production, preservation, and consumption. It integrates food chemistry, food microbiology, food engineering, food nutrition, food sensory science, and food safety and quality to address various aspects of food and its impact on the human health.

Menu Development and Nutritional Analysis

Food scientists utilise the knowledge of food chemistry, nutrition, and food technology to make informed decisions about menu development and nutritional analysis. This process involves creating new or modifying an existing menu (to improve appeal, nutritional properties and make food safe to eat), conducting nutritional analysis to determine the nutritional content of menu items (presence of macro-/micro-nutrients and allergens) and ensure food menu items meet dietary guidelines and regulations.

Role of Food Science in Hospital Foodservice Systems: A Review
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